

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK2004/000409

## Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The invention relates to aspects of a method of registering lightning strikes in the blade of a wind turbine, use of such method, a system of exercising the method. The method according to the invention of registering lightning strikes involves that the lightning strike is captured in a receptor arranged in the blade (5) of the wind turbine, and the lightning current is conducted completely or partially through at least one electric resistor (10), thereby heating it, and that it is registered at least that the temperature of the resistor is or was at some point increased. The heating of the electric resistor, ie the increase in temperature, provides simple and reliable registration. This can be extended to also comprise measurement of the amount of energy contained in the lightning current in a very robust and hence very suitable manner for the task. By the invention it is acknowledged that if a lightning current is conducted through a suitable electric resistor, this will "capture" a share of the amount of energy in the same manner as eg an electric radiator or a furnace, ie the resistor is heated by the current as a function of the voltage and the duration and hence of the amount of energy.

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01W1/16 F03D11/00 F03D1/00 H02G13/00 G01R29/08

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01W F03D H02G G01R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, COMPENDEX, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 036 937 A (HITACHI ENG SERVICE ; HITACHI LTD (JP)) 20 September 2000 (2000-09-20) column 3, line 51 - column 4, line 30 abstract; figures 1-4 -----	1-24
A	WO 01/86144 A (WOBLEN ALOYS) 15 November 2001 (2001-11-15) page 3, paragraphs 1,4 page 4, paragraphs 2,3 page 6, paragraph 4 - page 7, paragraph 4 claims 1-3; figures 1-3 -----	1-24
A	DE 295 22 152 U (BONUS ENERGY AS) 2 March 2000 (2000-03-02) page 8, line 13 - page 9, line 33 abstract; figures 1-4 -----	1-24



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

30 July 2004

Date of mailing of the international search report

11/08/2004

Name and mailing address of the ISA

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## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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			ES 2155527 T3	16-05-2001
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			PT 783629 T	29-06-2001

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